

**E.M. GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE**

**An Autonomous Institution -Affiliated to Madurai Kamaraj University**

**Re-accredited (3<sup>rd</sup> Cycle) with Grade A<sup>+</sup> & CGPA 3.51 by NAAC**



**LESSON PLAN**  
**2023-2024**

**DEPARTMENT OF MATHEMATICS**

**(UG – Odd Semester)**



**E.M.GOPALAKRISHNA KONE YADAVA WOMEN'S COLLEGE**  
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**DEPARTMENT OF MATHEMATICS**  
**I - B.SC MATHEMATICS**

**LESSON PLAN**  
**2023-2024**

Sub. Code : 23OUMA11  
Title of the Paper: Algebra & Trigonometry  
Total Hours : 75  
Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Reciprocal Equations-Standard form- Increasing or decreasing the roots of a given equation- Removal of terms, Approximate solutions of roots of polynomials by Horner's method-related problems.	15	Chalk & Talk	R.R. Subhaya
August	II	Summation of Series: Binomial- Exponential -Logarithmic series (Theorems without proof) - Approximations- related problems.	15	Chalk & Talk	R.R. Subhaya
Sep	III	Characteristic equation - Eigen values and Eigen Vectors-Similar matrices - Cayley - Hamilton Theorem (Statement only) - Finding powers of square matrix, Inverse of a square matrix up to order 3, Diagonalization of square matrices- related problems.	15	Chalk & Talk	R.R. Subhaya
Oct	IV	Expansions of $\sin n\theta$ , $\cos n\theta$ in powers of $\sin\theta$ , $\cos\theta$ -Expansion of $\tan n\theta$ in terms of $\tan\theta$ , Expansions of $\cos^n\theta$ , $\sin^n\theta$ , $\cos^m\theta \sin^n\theta$ -Expansions of $\tan(\theta_1+\theta_2+\dots+\theta_n)$ - Expansions of $\sin\theta$ , $\cos\theta$ and $\tan\theta$ in terms of $\theta$ - related problems.	15	Chalk & Talk	R.R. Subhaya
Nov	V	Hyperbolic functions - Relation between circular and hyperbolic functions Inverse hyperbolic functions, Logarithm of complex quantities- related problems.	15	Chalk & Talk	R.R. Subhaya

  
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**DEPARTMENT OF MATHEMATICS**

**I - B.Sc., Mathematics**

**LESSON PLAN**

**2023-2024**

Sub. Code: 23OUMA12

Title of the Paper: Differential Calculus

Total Hours: 60

STREAM - Regular.

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	<b>Successive Differentiation:</b> The derivative– Standard results– Fractional expressions –Trigonometrical transformation– Formation of equations involving derivatives– Leibnitz formula for the $n^{\text{th}}$ derivative of a product	12	Chalk & Talk	P. N. P.
July	II	<b>Partial Differentiation:</b> Partial derivatives– Successive partial derivatives–Function of a function rule– Total differential coefficient– A special case – Implicit Functions.	12	Chalk & Talk	P. N. P.
Aug	III	<b>Partial Differentiation (Continued):</b> Homogeneous functions–Partial derivatives of a function of two variables – Maxima and Minima of functions of two variables - Lagrange's method of undetermined multipliers	12	Chalk & Talk	P. N. P.
Sep	IV	<b>Envelope:</b> Method of finding the envelope – Another definition of envelope–	12	Chalk & Talk	P. N. P.

		Envelope of family of curves which are quadratic in the parameter.			
Oct	V	<b>Curvature:</b> Definition of Curvature – Circle, Radius and Centre of Curvature – Evolutes and Involutives – Radius of Curvature in Polar Co-ordinates.	12	Chalk & Talk	<i>P. R. P.</i>

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**DEPARTMENT OF MATHEMATICS**

**I - B.Sc., Mathematics - Regular**

**LESSON PLAN**

**2023-2024**

**Sub. Code: 23OUMASECN1**

**Title of the Paper: Mathematics for Competitive Examinations-I**

**Total Hours:30**

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Numbers and Simplifications	6	Chalk & Talk	selvi
August	II	Square roots and cube roots	6	Chalk & Talk	selvi
Sep	III	Average & Problems on Numbers	6	Chalk & Talk	selvi
Oct	IV	Problems on Ages	6	Chalk & Talk	selvi
Nov	V	Percentage, Profit and Loss	6	Chalk & Talk	selvi

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**DEPARTMENT OF MATHEMATICS**

I - B.Sc., Mathematics - Regular

**LESSON PLAN**

2023-2024

Sub. Code: 23OUM AFC1

Title of the Paper: Foundation Course- Bridge Mathematics

Total Hours: 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Algebra: Binomial theorem, General term, middle term, problems based on these concepts	6	Chalk & Talk	R. K. Math.
August	II	Sequences and series (Progressions). Fundamental principle of counting. Factorial n.	6	Chalk & Talk	R. K. Math.
Sep	III	Permutations and combinations, Derivation of formulae and their connections, simple applications, combinations with repetitions, arrangements within groups, formation of groups.	6	Chalk & Talk	R. K. Math.
Oct	IV	Trigonometry: Introduction to trigonometric ratios, proof of $\sin(A+B)$ , $\cos(A+B)$ , $\tan(A+B)$ formulae, multiple and sub multiple angles, $\sin(2A)$ , $\cos(2A)$ , $\tan(2A)$ etc., transformations sum into product and product into sum formulae, inverse trigonometric functions, sine rule and cosine rule.	6	Chalk & Talk	R. K. Math.
Nov	V	Calculus: Limits, standard formulae and problems, differentiation first principle, uv rule, u/v rule, methods of differentiation, application of derivatives, integration- product rule and substitution method.	6	Chalk & Talk	R. K. Math.

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DEPARTMENT OF MATHEMATICS

II - B.Sc., Mathematics – Regular

LESSON PLAN

2023-2024

Sub. Code: 22OUMA31

Title of the Paper: Modern Algebra

Total Hours: 90

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Groups: Definition and Examples - Elementary properties of groups– Equivalent definitions of a group – Permutation Groups-Subgroups.	18	Chalk & Talk	N. Hema
August	II	Cyclic groups – Order of an Element-Cosets and Lagrange's Theorem-Normal Subgroups and Quotient Groups	18	Chalk & Talk	N. Hema
Sep	III	Isomorphism, Homomorphism – Rings: Definitions and Examples - Elementary properties of rings.	18	Chalk & Talk	N. Hema
Oct	IV	Isomorphism - Types of Rings – Characteristic of a ring –Subrings	18	Chalk & Talk	N. Hema
Nov	V	Ideals-Quotient rings- Maximal and prime ideals	18	Chalk & Talk	N. Hema

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**DEPARTMENT OF MATHEMATICS**  
**III - B.SC MATHEMATICS**  
**LESSON PLAN**  
**2023-2024**

Sub. Code : 22OUMADSE3A

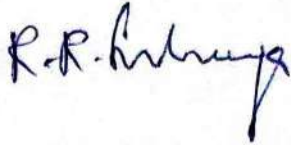
Title of the Paper: Operations Research

Total Hours : 75

Stream: Regular

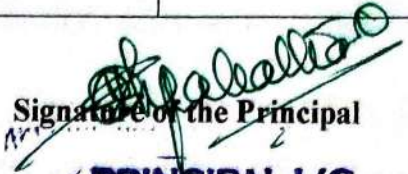
Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	<b>Linear programming problem (LPP):</b> Introduction-Mathematical formulation of the Linear Programming problem - Graphical solution method - Some exceptional cases-General linear programming problem-Canonical & standard form of LPP	15	Chalk & Talk	R. R. Subramanyam
August	II	<b>LPP Simplex Method:</b> Introduction-Fundamental properties of solutions -The computational procedure - Use of Artificial Variable	15	Chalk & Talk	R. R. Subramanyam
Sep	III	<b>Duality in LPP:</b> Introduction-General primal -Dual pair-Formulating a dual problem-Primal dual pair in matrix form -Duality and simplex method- Dual simplex method(problems only)	15	Chalk & Talk	R. R. Subramanyam
Oct	IV	<b>Assignment Problem:</b> Introduction-LP formulation of the Transportation Problem - Solution of a transportation problem - Finding an initial basic feasible solution - Test for optimality - Transportation algorithm (MODI method) - Solution methods of assignment problem- Travelling salesman Problems	15	Chalk & Talk	R. R. Subramanyam



Nov	<b>V</b> <b>Games and strategies :</b> Two-person zero-sum games – Some basic terms – The Maxmini – Minimax Principle - Games without saddle points- Mixed Strategies – Graphic Solution of 2xn and mx2 games – Dominance Property	15	Chalk & Talk	
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**DEPARTMENT OF MATHEMATICS**

**II - B.Sc., Mathematics**

**LESSON PLAN**

**2023-2024**

Sub. Code: 22OUMASE3

Title of the Paper: Application of Calculus

Total Hours: 75

Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Maxima and Minima-Concavity and convexity,Point of inflexion-indetermined forms.	6	Chalk & Talk	
Aug	II	Tangent and Normal – Angle of intersection of curves-singular points	6	Chalk & Talk	
Sep	III	Linear Asymptotes- Asymptotes parallel to the axes- Another method for find asymptotes-asymptotes by inspection intersection of a curve with its asymptotes.	6	Chalk & Talk	
Oct	IV	Tracing a curves- Cartesian equation and polar equation(except well known curves)	6	Chalk & Talk	
Nov	V	Area of plane region and length of a plane curve	6	Chalk & Talk	

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**DEPARTMENT OF MATHEMATICS**

**III - B.SC MATHEMATICS**

**LESSON PLAN**

**2023-2024**

Sub. Code : 21M51


Title of the Paper: Modern Analysis

Total Hours : 75

Stream: Regular

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Countable Sets - Uncountable Sets - Inequalities of Holder and Minkowski - <b>Metric Spaces</b> -Definitions and - Open Ball in a Metric Dense Sets - <b>Complete Metric Spaces</b> - Completeness - Baire's Category Theorem.	15	Chalk & Talk	R. R. Subramanyam
August	II	<b>Continuity</b> - Continuity - Homeomorphism - Uniform Continuity.Countable Sets - Uncountable Sets - Inequalities of Holder and Minkowski - Open Ball in a Metric Space - Open Sets - Subspace - Interior of a set	15	Chalk & Talk	R. R. Subramanyam
Sep	III	<b>Complete Metric Spaces</b> - Completeness - Baire's Category Theorem.	15	Chalk & Talk	R. R. Subramanyam
Oct	IV	<b>Connectedness</b> - Definition and Examples - Connected Subsets of $\mathbb{R}$ - Connectedness and Continuity	15	Chalk & Talk	R. R. Subramanyam
Nov	V	<b>Connectedness</b> - Definition and Examples - Connected Subsets of $\mathbb{R}$ - Connectedness and Continuity	15	Chalk & Talk	R. R. Subramanyam

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**DEPARTMENT OF MATHEMATICS**

II- B.Sc., Mathematics – Regular

**LESSON PLAN**

**2023-2024**

**Sub. Code: 21M52**

**Title of the Paper: Statistics –I**

**Total Hours: 75**

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Moments, Skewness and Kurtosis: Moments – Skewness and Kurtosis – Curve Fitting – Principle of least squares	15	Chalk & Talk	P. N. P.
August	II	<b>Correlation and Regression:</b> Correlation – Rank Correlation – Regression – Correlation Co- Efficient for a Bivariate Frequency Distribution.	15	Chalk & Talk	P. N. P.
Sep	III	<b>Theory of Attributes:</b> Attributes- Consistency of data – Independence and Association of data.	15	Chalk & Talk	P. N. P.
Oct	IV	<b>Index Number:</b> Index Numbers – Consumer Price Index Number ( cost of living index numbers).	15	Chalk & Talk	P. N. P.
Nov	V	<b>Probability:</b> Probability – Conditional Probability.	15	Chalk & Talk	P. N. P.

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**DEPARTMENT OF MATHEMATICS**

*III - B.Sc., Mathematics - Regular*

**LESSON PLAN**

**2023-2024**

**Sub. Code: 21M53**


**Title of the Paper: Dynamics**

**Total Hours: 60**

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	. Definitions – Two fundamental principles – Path of a Projectile is a parabola – Characteristics of the motion of a projectile - To determine when the horizontal range of a projectile is maximum, given the magnitude $u$ of the velocity of projection – To show that, for a given initial velocity of projection there are, in general to possible directions of projections so as to obtain a given horizontal range. <b>(with examples)</b>	12	Chalk & Talk	<i>R. M.</i>
August	II	To find the velocity of the projectile in magnitude and direction at the end of time $t$ – To show that , The velocity at any point $p$ of a projectile is equal in magnitude to the velocity acquire in falling freely from the directrix to	12	Chalk & Talk	<i>S. M.</i>

		<p>the point – Given the magnitude of the velocity of projection, to show that there are two direction of projection for the particle so as to reach a given point – Range on an inclined plane – To find , The greatest distance of the projectile from the inclined plane and show that is attained in the half the total time of flight – To determine when the range on the inclined plane is maximum, given the magnitude <math>u</math> of the velocity of projection – To show that, For a given initial velocity of projection, there are, in general, two possible directions of projection so as to obtain a given range on an inclined plane – Motion on the surface of a smooth inclined plane.(with examples)</p>			<i>R. M.</i>
Sep	<b>III</b>	<p><b>Collision of Elastic Bodies –</b>          Definitions – Fundamental laws of impact – Impact on the smooth sphere on a fixed smooth plane – Direct impact of two smooth spheres – Laws of kinetic energy due to direct impact of two smooth spheres – Oblique impact of two smooth spheres – Laws of kinetic energy due to oblique impact of two smooth sphere.(with examples)</p>	12	Chalk & Talk	<i>R. M.</i>
Oct	<b>IV</b>	<p>Simple Harmonic Motions – Simple Harmonic Motion in a</p>	12	Chalk & Talk	

		<p>Straight line – General solution of S.H.M Equation – Geometrical Representation of a Simple Harmonic Motion – Change of origin - Composition of two Simple Harmonic Motion of the same period and in same straight line – Composition of two Simple Harmonic Motion of the same period in two perpendicular directions.(with examples)</p>			R. Mh
Nov	V	<p><b>Motion Under The Action Of Central Forces</b> – Velocity and Acceleration in Polar Co-ordinates – Equation of Motion in Polar Coordinates – Note on the equiangular spiral – Differential Equation of central orbits – Perpendicular from the pole on the tangent formulae in polar coordinates – Pedal equation of the central orbit. (with examples)</p>	12	Chalk & Talk	R. Mh

  
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DEPARTMENT OF MATHEMATICS

III - B.Sc., Mathematics - Regular

LESSON PLAN

2023-2024

Sub. Code: 21ME5A

Title of the Paper: Linear Algebra

Total Hours: 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	<b>Vector Spaces:</b> Definition and Examples – Subspaces – Linear Transformations.	12	Chalk & Talk	<i>P. R. Arshady</i>
July	II	<b>Vector Spaces:</b> Span of a set – Linear Independence – Basis and Dimension – Rank and Nullity – Matrix of a Linear Transformation.	12	Chalk & Talk	<i>P. R. Arshady</i>
Aug	III	<b>Inner Product Space:</b> Definition and Examples – Orthogonality – Orthogonal Complement.	12	Chalk & Talk	<i>P. R. Arshady</i>
Sep	IV	<b>Theory of Matrices:</b> Algebra of Matrices – Types of Matrices – The Inverse of Matrix.	12	Chalk & Talk	<i>P. R. Arshady</i>
Oct	V	<b>Theory of Matrices:</b> Elementary Transformations – Ranks of a Matrix – Simultaneous Linear Equations – Characteristic Equation and Cayley Hamilton Theorem – Eigen Values and Eigen Vectors.	12	Chalk & Talk	<i>P. R. Arshady</i>

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DEPARTMENT OF MATHEMATICS

III - B.Sc., Mathematics

LESSON PLAN

2023-2024

Sub. Code: 21AA51

Title of the Paper: Programming in C

Stream: Regular

Total Hours: 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	Overview of C – Constants, Variables and Data types.	12	Chalk & Talk	A. Manjula
July	II	Operators and Expressions – Decision Making and Branching.	12	Chalk & Talk	A. Manjula
Aug	III	Arrays – Characters Arrays and Strings.	12	Chalk & Talk	A. Manjula
Sep	IV	User-defined Functions.	12	Chalk & Talk	A. Manjula
Oct	V	Structures and Unions – Pointers.	12	Chalk & Talk	A. Manjula

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DEPARTMENT OF MATHEMATICS

III - B.Sc., Mathematics

LESSON PLAN

2023-2024

Sub. Code: 21SEM51

Title of the Paper: Vector Calculus

Stream: Regular

Total Hours: 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	Differentiation of vectors – Gradient.	6	Chalk & Talk	P. R. S. P.
July	II	Divergence and curl – Solved Problems.	6	Chalk & Talk	P. R. S. P.
Aug	III	Directional derivative – Solenoidal – Irrotational vectors.	6	Chalk & Talk	P. R. S. P.
Sep	IV	Line integral – surface integral(without problems)	6	Chalk & Talk	P. R. S. P.
Oct	V	Theorems of Green, Gauss and Stoke's theorem (without proof) Simple applications.	6	Chalk & Talk	P. R. S. P.

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**DEPARTMENT OF MATHEMATICS**

**III - B.SC MATHEMATICS - Regular.**

**LESSON PLAN**

**2023-2024**

Sub. Code : 22SEM52

Title of the Paper: Quantitative Aptitude

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Problems on Numbers & Problems on Ages	6	Chalk & Talk	
Sep	II	Profit and Loss-Ratio and Proportion	6	Chalk & Talk	
Oct	III	Time and Work-Time and Distance	6	Chalk & Talk	
Nov	IV	Averages - Probability	6	Chalk & Talk	
Dec/Jan	V	Permutations and Combinations - Heights & Distance	6	Chalk & Talk	

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**DEPARTMENT OF MATHEMATICS**  
**I - B.SC MATHEMATICS**

**LESSON PLAN**  
**2023-2024**

**Sub. Code : 23OUMA11**  
**Title of the Paper: Algebra & Trigonometry**  
**Total Hours : 75**  
**Stream: Self-finance**

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Reciprocal Equations-Standard form- Increasing or decreasing the roots of a given equation- Removal of terms, Approximate solutions of roots of polynomials by Horner's method- related problems.	15	Chalk & Talk	R. R. Subanya
August	II	Summation of Series: Binomial- Exponential - Logarithmic series (Theorems without proof) - Approximations- related problems.	15	Chalk & Talk	R. R. Subanya
Sep	III	Characteristic equation - Eigen values and Eigen Vectors-Similar matrices - Cayley - Hamilton Theorem (Statement only) - Finding powers of square matrix, Inverse of a square matrix up to order 3, Diagonalization of square matrices- related problems.	15	Chalk & Talk	R. R. Subanya
Oct	IV	Expansions of $\sin^n\theta$ , $\cos^n\theta$ in powers of $\sin\theta$ , $\cos\theta$ -Expansion of $\tan^n\theta$ in terms of $\tan\theta$ , Expansions of $\cos^n\theta$ , $\sin^n\theta$ , $\cos^m\theta \sin^n\theta$ - Expansions of $\tan(\theta_1+\theta_2+\dots+\theta_n)$ - Expansions of $\sin\theta$ , $\cos\theta$ and $\tan\theta$ in terms of $\theta$ - related problems.	15	Chalk & Talk	R. R. Subanya
Nov	V	Hyperbolic functions - Relation between circular and hyperbolic functions Inverse hyperbolic functions, Logarithm of complex quantities- related problems.	15	Chalk & Talk	R. R. Subanya

  
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Re-accredited (3<sup>rd</sup> Cycle) with Grade A<sup>+</sup> and CGPA 3.51 by NAAC

## DEPARTMENT OF MATHEMATICS

I - B.Sc., Mathematics

### LESSON PLAN

2023-2024

Sub. Code: 23OUMA12

Title of the Paper: Differential Calculus

Stream: Self-Finance

Total Hours: 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	<b>Successive Differentiation:</b> The derivative– Standard results– Fractional expressions –Trigonometrical transformation– Formation of equations involving derivatives– Leibnitz formula for the $n^{\text{th}}$ derivative of a product	12	Chalk & Talk	N. Uma Maheswari
July	II	<b>Partial Differentiation:</b> Partial derivatives– Successive partial derivatives–Function of a function rule– Total differential coefficient– A special case – Implicit Functions.	12	Chalk & Talk	N. Uma Maheswari
Aug	III	<b>Partial Differentiation (Continued):</b> Homogeneous functions–Partial derivatives of a function of two variables – Maxima and Minima of functions of two variables - Lagrange's method of undetermined multipliers	12	Chalk & Talk	N. Uma Maheswari
Sep	IV	<b>Envelope:</b> Method of finding the envelope – Another definition of envelope–	12	Chalk & Talk	N. Uma Maheswari

		Envelope of family of curves which are quadratic in the parameter.			
Oct	V	<b>Curvature:</b> Definition of Curvature – Circle, Radius and Centre of Curvature – Evolutes and Involutives – Radius of Curvature in Polar Co-ordinates.	12	Chalk & Talk	N. Uma Maheswari

P. S. P.

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**DEPARTMENT OF MATHEMATICS**

**II - B.Sc., Mathematics - SF**

**LESSON PLAN**

**2023-2024**

**Sub. Code: 22OUMA31**

**Title of the Paper: Modern Algebra**

**Total Hours: 90**

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Groups: Definition and Examples - Elementary properties of groups– Equivalent definitions of a group – Permutation Groups-Subgroups.	18	Chalk & Talk	N. Hema
August	II	Cyclic groups – Order of an Element-Cosets and Lagrange's Theorem-Normal Subgroups and Quotient Groups	18	Chalk & Talk	N. Hema
Sep	III	Isomorphism, Homomorphism – Rings: Definitions and Examples - Elementary properties of rings.	18	Chalk & Talk	N. Hema
Oct	IV	Isomorphism - Types of Rings – Characteristic of a ring –Subrings	18	Chalk & Talk	N. Hema
Nov	V	Ideals-Quotient rings- Maximal and prime ideals	18	Chalk & Talk	N. Hema

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**DEPARTMENT OF MATHEMATICS**

**III - B.SC MATHEMATICS**

**LESSON PLAN**

**2023-2024**

**Sub. Code : 22OUMADSE3A**

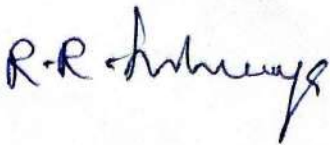
**Title of the Paper: Operations Research**

**Total Hours : 75**

**Stream: Self-finance**

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	<b>Linear programming problem (LPP):</b> Introduction-Mathematical formulation of the Linear Programming problem - Graphical solution method - Some exceptional cases-General linear programming problem-Canonical & standard form of LPP	15	Chalk & Talk	R.R. Subramanyam
August	II	<b>LPP Simplex Method:</b> Introduction-Fundamental properties of solutions -The computational procedure - Use of Artificial Variable	15	Chalk & Talk	R.R. Subramanyam
Sep	III	<b>Duality in LPP:</b> Introduction-General primal -Dual pair-Formulating a dual problem-Primal dual pair in matrix form -Duality and simplex method- Dual simplex method(problems only)	15	Chalk & Talk	R.R. Subramanyam
Oct	IV	<b>Assignment Problem:</b> Introduction-LP formulation of the Transportation Problem - Solution of a transportation problem - Finding an initial basic feasible solution - Test for optimality - Transportation algorithm (MODI method) - Solution methods of assignment problem- Travelling salesman Problems	15	Chalk & Talk	R.R. Subramanyam



Nov	V	<b>Games and strategies :</b> Two-person zero-sum games – Some basic terms – The Maxmini – Minimax Principle – Games without saddle points- Mixed Strategies – Graphic Solution of 2xn and mx2 games – Dominance Property	15	Chalk & Talk	
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DEPARTMENT OF MATHEMATICS

II - B.Sc., Mathematics

LESSON PLAN

2023-2024

Sub. Code: 22OUMASE3

Title of the Paper: Application of Calculus

Total Hours: 75

Stream: Self-finance

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Maxima and Minima-Concavity and convexity,Point of inflexion-indetermined forms.	6	Chalk & Talk	
Aug	II	Tangent and Normal – Angle of intersection of curves-singular points	6	Chalk & Talk	
Sep	III	Linear Asymptotes- Asymptotes parallel to the axes- Another method for find asymptotes-asymptotes by inspection intersection of a curve with its asymptotes.	6	Chalk & Talk	
Oct	IV	Tracing a curves- Cartesian equation and polar equation(except well known curves)	6	Chalk & Talk	
Nov	V	Area of plane region and length of a plane curve	6	Chalk & Talk	

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**DEPARTMENT OF MATHEMATICS**

**III - B.SC MATHEMATICS**

**LESSON PLAN**

**2023-2024**

**Sub. Code : 21M51**

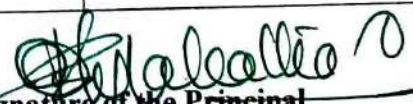
**Title of the Paper: Modern Analysis**

**Total Hours : 75**

**Stream: Self-finance**

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Countable Sets - Uncountable Sets - Inequalities of Holder and Minkowski - <b>Metric Spaces</b> -Definitions and - Open Ball in a Metric Dense Sets - <b>Complete Metric Spaces</b> - Completeness - Baire's Category Theorem.	15	Chalk & Talk	R.R. Subramanyam
August	II	<b>Continuity</b> - Continuity - Homeomorphism - Uniform Continuity.Countable Sets - Uncountable Sets - Inequalities of Holder and Minkowski - Open Ball in a Metric Space - Open Sets - Subspace - Interior of a set	15	Chalk & Talk	R.R. Subramanyam
Sep	III	<b>Complete Metric Spaces</b> - Completeness - Baire's Category Theorem.	15	Chalk & Talk	R.R. Subramanyam
Oct	IV	<b>Connectedness</b> - Definition and Examples - Connected Subsets of $\mathbf{R}$ - Connectedness and Continuity	15	Chalk & Talk	R.R. Subramanyam
Nov	V	<b>Connectedness</b> - Definition and Examples - Connected Subsets of $\mathbf{R}$ - Connectedness and Continuity	15	Chalk & Talk	R.R. Subramanyam

  
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**DEPARTMENT OF MATHEMATICS**

**III - B.Sc., Mathematics**

**LESSON PLAN**

**2023-2024**

**Sub. Code: 21M52**

**Title of the Paper: Statistics –I**

**Stream:Self-Finance**

**Total Hours: 75**

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	Moments, Skewness and Kurtosis: Moments – Skewness and Kurtosis – Curve Fitting – Principle of least squares	15	Chalk & Talk	
August	II	<b>Correlation and Regression:</b> Correlation – Rank Correlation – Regression – Correlation Co- Efficient for a Bivariate Frequency Distribution.	15	Chalk & Talk	
Sep	III	<b>Theory of Attributes:</b> Attributes- Consistency of data – Independence and Association of data.	15	Chalk & Talk	
Oct	IV	<b>Index Number:</b> Index Numbers – Consumer Price Index Number (cost of living index numbers).	15	Chalk & Talk	
Nov	V	<b>Probability:</b> Probability – Conditional Probability.	15	Chalk & Talk	

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**DEPARTMENT OF MATHEMATICS**


III - B.Sc., Mathematics  
**LESSON PLAN**  
2023-2024

**Sub. Code: 21M53**

**Title of the Paper: Dynamics**  
**Stream-Self Finance**


**Total Hours: 60**

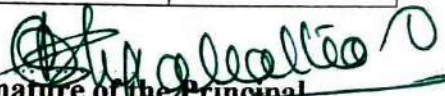
Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
July	I	. Definitions – Two fundamental principles – Path of a Projectile is a parabola – Characteristics of the motion of a projectile - To determine when the horizontal range of a projectile is maximum, given the magnitude $u$ of the velocity of projection – To show that, for a given initial velocity of projection there are, in general to possible directions of projections so as to obtain a given horizontal range. <b>(with examples)</b>	12	Chalk & Talk	

August	<p>To find the velocity of the projectile in magnitude and direction at the end of time <math>t</math> – To show that, The velocity at any point <math>p</math> of a projectile is equal in magnitude to the velocity acquire in falling freely from the directrix to the point – Given the magnitude of the velocity of projection, to show that there are two direction of projection for the particle so as to reach a given point – Range on an inclined plane – To find, The greatest distance of the projectile from the inclined plane and show that is attained in the half the total time of flight – To determine when the range on the inclined plane is maximum, given the magnitude <math>u</math> of the velocity of projection – To show that, For a given initial velocity of projection, there are, in general, two possible directions of projection so as to obtain a given range on an inclined plane – Motion on the surface of a smooth inclined plane.(with examples)</p>	12	Chalk & Talk	
Sep	<p><b>III</b> <b>Collision of Elastic Bodies –</b> Definitions – Fundamental laws of impact – Impact on the smooth</p>	12	Chalk & Talk	

sphere  
Direct  
spheres  
due to sh

		<p>sphere on a fixed smooth plane – Direct impact of two smooth spheres – Laws of kinetic energy due to direct impact of two smooth spheres – Oblique impact of two smooth spheres – Laws of kinetic energy due to oblique impact of two smooth sphere.(with examples)</p>			R.M
Oct	IV	<p>Simple Harmonic Motions – Simple Harmonic Motion in a Straight line – General solution of S.H.M Equation – Geometrical Representation of a Simple Harmonic Motion – Change of origin - Composition of two Simple Harmonic Motion of the same period and in same straight line – Composition of two Simple Harmonic Motion of the same period in two perpendicular directions.(with examples)</p>	12	Chalk & Talk	R.M
Nov	V	<p><b>Motion Under The Action Of Central Forces</b> – Velocity and Acceleration in Polar Co-ordinates – Equation of Motion in Polar Coordinates – Note on the equiangular spiral – Differential Equation of central orbits – Perpendicular from the pole on the tangent formulae in polar coordinates – Pedal equation of the central orbit. (with examples)</p>	12	Chalk & Talk	R.M

  
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DEPARTMENT OF MATHEMATICS

III - B.Sc., Mathematics

LESSON PLAN

2023-2024

Sub. Code: 21ME5A

Title of the Paper: Linear Algebra

Stream: Self-Finance

Total Hours: 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	<b>Vector Spaces:</b> Definition and Examples – Subspaces – Linear Transformations.	12	Chalk & Talk	P. R. P.
July	II	<b>Vector Spaces:</b> Span of a set – Linear Independence – Basis and Dimension – Rank and Nullity – Matrix of a Linear Transformation.	12	Chalk & Talk	P. R. P.
Aug	III	<b>Inner Product Space:</b> Definition and Examples – Orthogonality – Orthogonal Complement.	12	Chalk & Talk	P. R. P.
Sep	IV	<b>Theory of Matrices:</b> Algebra of Matrices – Types of Matrices – The Inverse of Matrix.	12	Chalk & Talk	R. R. Subanya
Oct	V	<b>Theory of Matrices:</b> Elementary Transformations – Ranks of a Matrix – Simultaneous Linear Equations – Characteristic Equation and Cayley Hamilton Theorem – Eigen Values and Eigen Vectors.	12	Chalk & Talk	R. R. Subanya

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DEPARTMENT OF MATHEMATICS

III - B.Sc., Mathematics

LESSON PLAN

2023-2024

Sub. Code: 21AA51

Title of the Paper: Programming in C

Stream: Self-Finance

Total Hours: 60

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	Overview of C – Constants, Variables and Data types.	12	Chalk & Talk	A. Magala
July	II	Operators and Expressions – Decision Making and Branching.	12	Chalk & Talk	A. Magala
Aug	III	Arrays – Characters Arrays and Strings.	12	Chalk & Talk	A. Magala
Sep	IV	User-defined Functions.	12	Chalk & Talk	A. Magala
Oct	V	Structures and Unions – Pointers.	12	Chalk & Talk	A. Magala

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**DEPARTMENT OF MATHEMATICS**

**III - B.Sc., Mathematics**

**LESSON PLAN**

**2023-2024**

Sub. Code: 21SEM51

Title of the Paper: Vector Calculus

Stream: Self-Finance

Total Hours: 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
June	I	Differentiation of vectors – Gradient.	6	Chalk & Talk	N. Uma Maheswari
July	II	Divergence and curl – Solved Problems.	6	Chalk & Talk	N. Uma Maheswari
Aug	III	Directional derivative – Solenoidal – Irrotational vectors.	6	Chalk & Talk	N. Uma Maheswari
Sep	IV	Line integral – surface integral (without problems)	6	Chalk & Talk	N. Uma Maheswari
Oct	V	Theorems of Green, Gauss and Stoke's theorem (without proof) Simple applications.	6	Chalk & Talk	N. Uma Maheswari

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**DEPARTMENT OF MATHEMATICS**  
**III - B.SC MATHEMATICS (S.F)**  
**LESSON PLAN**  
**2023-2024**

Sub. Code : 22SEM52

Title of the Paper: Quantitative Aptitude

Total Hours : 30

Month	Unit	Description Of The Syllabus	Hours Allocated	Teaching Mode & Methods	Course Teacher Signature
Aug	I	Problems on Numbers & Problems on Ages	6	Chalk & Talk	
Sep	II	Profit and Loss-Ratio and Proportion	6	Chalk & Talk	
Oct	III	Time and Work-Time and Distance	6	Chalk & Talk	
Nov	IV	Averages - Probability	6	Chalk & Talk	
Dec/Jan	V	Permutations and Combinations - Heights & Distance	6	Chalk & Talk	

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